

CLAIMS

1. A connection assembly (5) comprising first and second elongate elements (2, 3) connected to one another at an intersection (4), the first element (2) comprising a tube and defining at least one receiving opening (6) through which the second element (3) is passed, and characterised in that the portion of the first element (2) defining the periphery of the receiving opening (6) protrudes inwards into the tube to define a collar (7) surrounding the second element (3).
2. An assembly (5) as claimed in Claim 1, characterised in that the first element (2) defines two aligned receiving openings (6) through which the second element (3) is passed, the portions of the first element (2) defining the peripheries of both of the receiving openings (6) protruding inwards into the tube to define two collars (7) surrounding the second element (3).
3. An assembly (5) as claimed in Claim 1 or Claim 2, characterised in that an inner dimension of the or of each collar (7) is dimensioned with respect to an outer dimension of the second element (3) so as to provide a frictional fit of the two elements (2, 3).
4. An assembly (5) as claimed in any of Claims 1 to 3, characterised in that the first element (2) has been drilled to define the receiving opening (6), the diameter (D2) of the drilled aperture (11) being less than the diameter (d2) of the second elongate element (3).
5. An assembly (5) as claimed in Claim 4, characterised in that the drilled aperture (11) was punched to deform the periphery of the aperture (11) so that it is folded

inwards into the tube to form the collar (7) and to increase the diameter (D2) of the aperture (11) to that (D3) of the receiving opening (6).

- 5 6. An assembly (5) as claimed in any of Claims 1 to 5, characterised in that the inner surface of the first element (2) is provided with at least one ridge (9), the apex of which lies close to or contacts the outer surface of the second element (3) at a position (P1).
- 10 7. An assembly (5) as claimed in any of Claims 1 to 6, characterised in that the first and second elongate elements (2, 3) are connected to one another at one or more positions (P1) in the region of their intersection
- 15 (4).
8. An assembly (5) as claimed in Claim 7 when dependent on Claim 6, characterised in that a connection position (P1) is formed where the outer surface of the second
- 20 element (3) lies opposed to the inner surface of the first element (2) at the apex of the ridge (9).
9. An assembly (5) as claimed in Claim 7 or Claim 8, characterised in that the first and second elongate
- 25 elements (2, 3) are made of metal and are connected to one another at said one or more positions (P1) by welding.
10. An assembly (5) as claimed in Claim 7 or Claim 8, characterised in that the first and second elongate
- 30 elements (2, 3) are made of a plastics material and are connected at said one or more positions (P1) by ultrasonic welding, induction welding or melt bonding.
- 35 11. An assembly (5) as claimed in any of Claims 1 to 10, characterised in that the first elongate element (2) is

tubular with a substantially circular, elliptical or ovoid cross-section.

- 5      12. An assembly (5) as claimed in any of Claims 1 to 11, characterised in that the second elongate element (3) is tubular with a substantially circular or oval cross-section.
- 10      13. An assembly (5) as claimed in any of Claims 1 to 12, characterised in that the diameter (d2) of the second element (3) is smaller by between 20% to 30% than the diameter (d1) of the first element (2).
- 15      14. A grid structure (1) comprising a plurality of first elongate, tubular elements (2) arranged in parallel and in a spaced relationship with respect to one another, a plurality of second elongate elements (3) arranged in parallel and in a spaced relationship with respect to one another, the first and second elements (2,3) intersecting and being connected to one another by means of at least one connection assembly as claimed in any of
- 20      Claims 1 to 11.